

What is claimed is:

1. A laminated solar battery wherein plural solar cell modules are incorporated and integrally laminated, characterized by that

there are provided with plural types of solar cell modules having different
5 sensitivity wavelength bands which are so laminated that the shorter the center wavelength in said sensitivity wavelength bands is, the more near said the module is located to an incidental side of sunlight,

wherein at least one type of said solar cell module is constructed to be a cell group module having plural nearly spherical solar cells aligned in plural
10 columns and plural rows.

2. The laminated solar battery according to claim 1, wherein at least one type of said solar cell module is constituted with a planar light receiving module having a planar common pn junction.

3. The laminated solar battery according to claim 1, wherein there are
15 provided with four types of solar cell modules,

three types of solar cell modules among said four types of solar cell modules being constituted with cell group modules each of which is comprising plural nearly spherical solar cells aligned in plural columns and plural rows, and one type of solar cell module among said four types of solar cell modules being
20 constituted with a planar light receiving module having a planar common pn junction.

4. The laminated solar battery according to claim 1 or 2, wherein said solar cells aligned in plural columns and plural rows in said cell group modules are electrically connected via plural lead wires extending in a columnar direction or a
25 row direction and led to the outside.

5. The laminated solar battery according to claim 4, wherein each of said cell group modules is provided with a serial/parallel connection circuit for electrically connecting said plural solar cells in serial and parallel by means of said plural lead wires.

5 6. The laminated solar battery according to claim 5, wherein there is provided with a serial connection circuit for electrically connecting said plural types of solar cell modules, an output current of each of said cell group modules being nearly equal to an output current of said planar light receiving module.

7. The laminated solar battery according to claim 6, wherein each of said cell
10 group modules has two layers of plural spherical solar cells aligned in plural columns and plural rows on a plane, arranging said spherical solar cells in said two layers to approach one another without overlapping in a plane view.

8. The laminated solar battery according to claim 4, wherein said planar light receiving module is arranged in the lowest layer to be located downside of
15 said plural cell group modules, and there is provided with a reflective member capable of reflecting the sunlight in a lower part or downside of said planar light receiving module.

9. The laminated solar battery according to claim 7, wherein any solar cell module except for a solar cell module at the incident-most side in an incidental
20 direction of sunlight is provided, on a surface thereof, with a mirror film that reflects a light of sensitivity wavelength bands which can be easily absorbed by solar cell modules above said any solar cell module.

10. The laminated solar battery according to claim 7, wherein said plural solar cells are received in a buried state inside transparent glass or synthetic
25 resin material, in said cell group modules.

11. The laminated solar battery according to claim 7, wherein a transparent member made of transparent glass or synthetic resin material is fixed at a top of said solar cell module on the incident-most side in the incidental direction of sunlight.

5 12. The laminated solar battery according to claim 3, wherein said planar light receiving module is arranged in the lowest position below said multiple cell group modules, and said three types of cell group modules have the first to third cell group modules laminated sequentially from an incidental side of sunlight,

said first cell group module being provided with plural solar cells each of
10 which has a nearly spherical pn junction on a surface resin of a nearly spherical GaP single crystal, said second cell group module being provided with plural solar cells each of which has a nearly spherical pn junction on a surface resin of a nearly spherical GaAs single crystal, and said third cell group module being provided with plural solar cells each of which has a nearly spherical pn junction on a
15 surface resin of nearly spherical Si single crystal.

13. The laminated solar battery according to claim 12, wherein said planar light receiving module has a planar common pn junction formed in an InGaAs semiconductor layer which is formed on an n-type InP semiconductor substrate.

14. The laminated solar battery according to claim 3, wherein said planar
20 light receiving module is arranged in a top layer above said plural cell group modules, and said three types of cell group modules have the first to third cell group modules laminated sequentially from an incidental side of sunlight,

said first cell group module having plural solar cells each of which has a nearly spherical pn junction on a surface resin of a nearly spherical GaAs single
25 crystal, said second cell group module having plural solar cells each of which has a

nearly spherical pn junction on the surface resin of a nearly spherical Si single crystal, and said third cell group module having plural solar cells each of which has a nearly spherical pn junction on the surface resin of a nearly spherical Ge single crystal.

5 15. The laminated solar battery according to claim 14, wherein said planar light receiving module has a planar common pn junction formed in a GaAsP semi-conductor layer which is formed on an n-type GaP semiconductor substrate.

16. The laminated solar battery according to claim 2, wherein there are provided with two types of planar light receiving modules, one or plural cell group
10 modules being incorporated between said two types of planar light receiving modules.

17. The laminated solar battery according to claim 1, wherein said plural types of solar cell modules are formed in a shape of cylinder, and laminated in a shape of concentric cylinder.